The Decentralized Identifier (DID) in the DNS

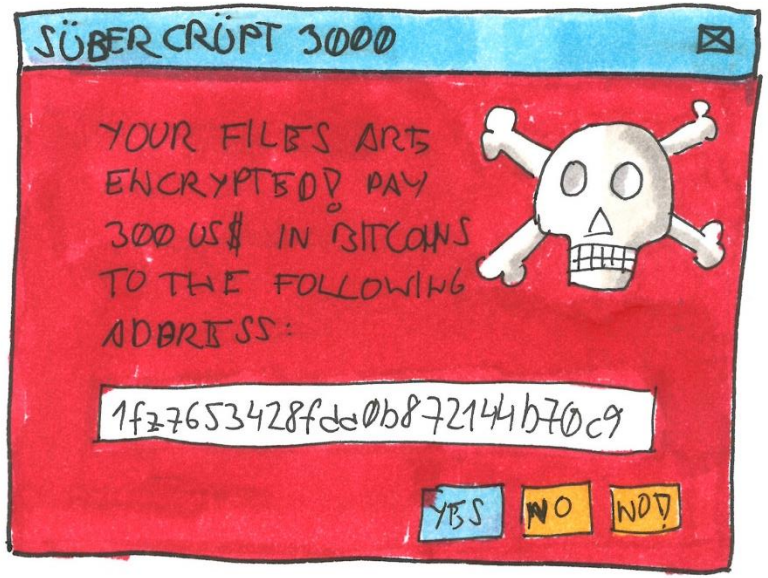
draft-mayrhofer-did-dns-00

A. Mayrhofer (nic.at) - D. Klesev (nic.at) - M. Sabadello (danubetech)

alexander.mayrhofer@nic.at

Background – Blockchain Adressing

- „Distributed Ledgers“ (read: Blockchains) typically use Adresses to identify resources
  - `3E53XjqK4Cxt71BGeT2VhpcotV8LZ853C8`
- Adresses lack identification of the Blockchain / Ledger on which they can be found
  - (above example is a bitcoin* address)
- Not suitable for identification
  - (at least on a global scale)
  - Ambiguity



*slightly modified

Bite Reflexes.

- „Let‘s put it into the DNS“
  - Makes it human friendly
  - Globally available resolution

- But, how exactly?
- Decisions, decisions..
  - TXT ?
  - RRTYPE ?
  - CLASS ?
  - Owner Name Structure?

Tylopodae Considerations.

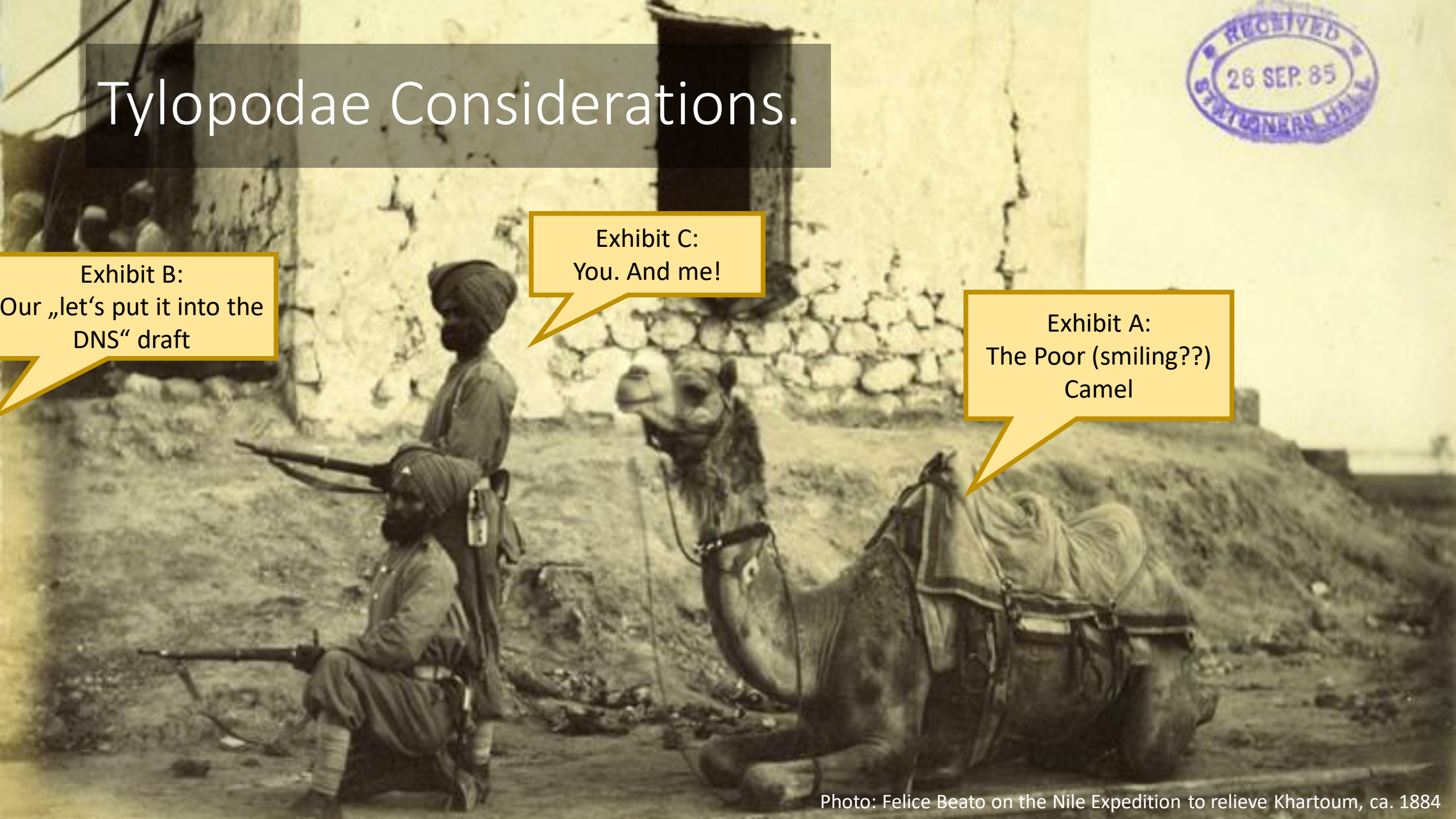


Photo: Felice Beato on the Nile Expedition to relieve Khartoum, ca. 1884

Background II – Decentralized Identifiers*

- Work of the W3C Credentials Community Group (soon to be „upgraded“ to a Working Group)
- URI-Scheme „did“ (Provisional Registration)
- Hierachical Scheme:

```
did:btrc:xzuc-wzcq-qqpq-qupuzs8
URI-Scheme:Method:Method-specific Identifier
```

- Bingo! RFC 7553: DNS URI RRtype!

*https://w3c-ccg.github.io/did-spec/

draft-mayrhofer-dns-did-00

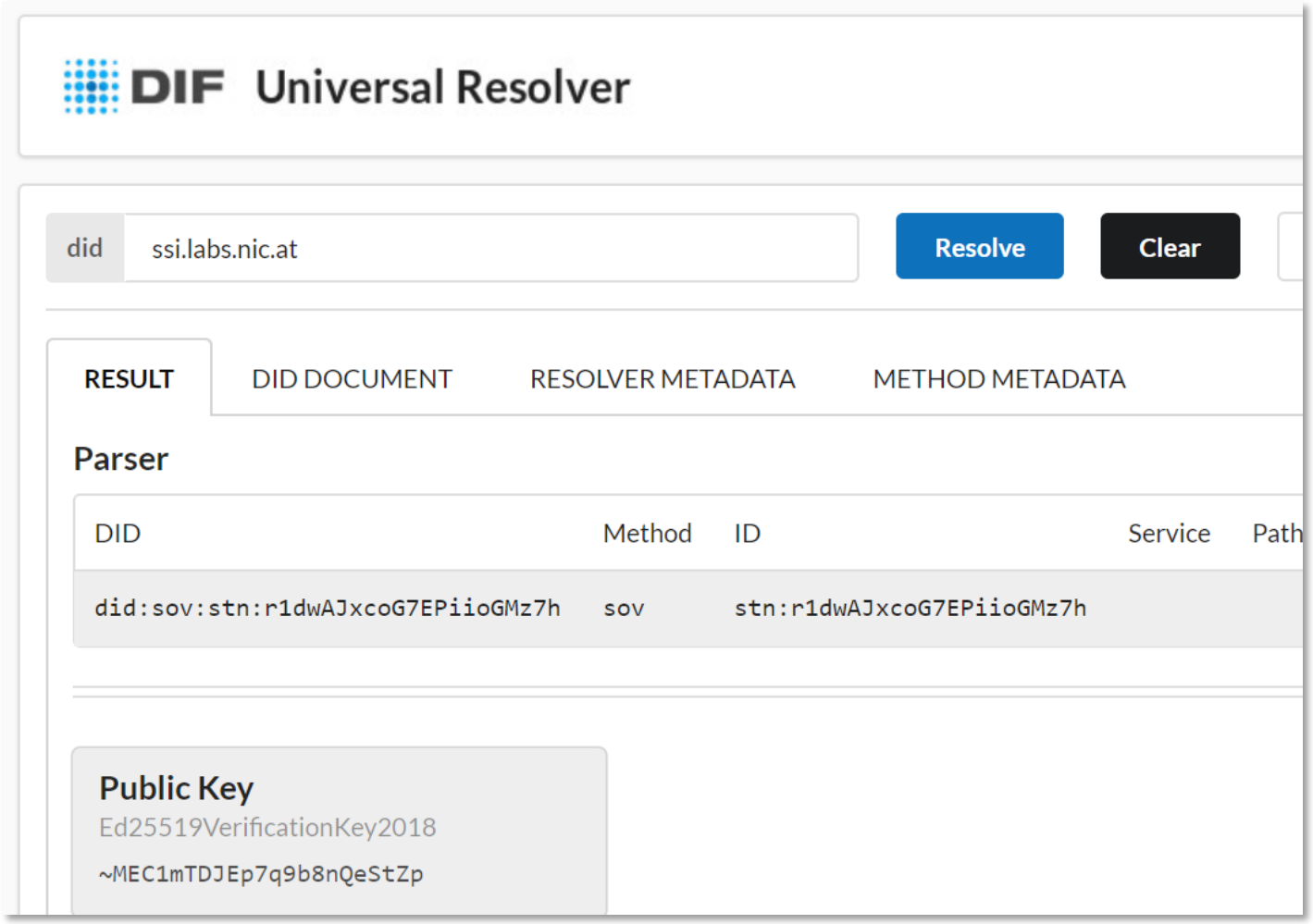
```
_did.example.net. IN URI 100 10 "did:sov:1234abcd"
```

- **RRType + Owner Name:** RFC 7553 – URI RRType
- **Email to DID:** RFC 7929 – DANE for OpenPGP
- **Service Parameter:** Existing IANA-Registry*
  - But requires Port or at least Protocol
  - Or an ENUMservice
  - (Current) Solution: Update RFC7553 to allow „_did“ as well besides the two types above..

*https://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.xhtml

Running Code

- uniresolver.io



Next steps.

- Update of RFC7553 the most efficient way?
- Easiest: Entry for a protocol-independent „Service Parameter“
  - Is that possible?
  - Question to IANA pending [#1118333]

- Way forward with the draft?